Abortion and Breast Cancer

The relationship between abortion and breast cancer has been the subject of extensive research. However, evidence of a direct relationship between breast cancer and either induced or spontaneous abortion is inconsistent. Some studies have indicated small elevations in risk, while others have not shown any risk associated with either induced or spontaneous abortions.

A large-scale epidemiologic study of this question, reported in *The New England Journal of Medicine* in 1997, determined that the risk of developing breast cancer for women with a history of induced abortion was not different from the risk for women without such a history. The authors, Melbye and others, used data from Danish health registries. Registry data on abortions was collected *before* the diagnosis of breast cancer was made. Using information on abortions that was collected before breast cancer developed avoids recall or reporting bias, which may occur in retrospective studies when information about abortions is collected *after* the diagnosis of breast cancer. The authors concluded that "induced abortions have no overall effect on the risk of breast cancer."

Earlier studies that attempted to evaluate the association between abortion and breast cancer were limited in many cases by small numbers of women in the studies, questions of comparability between the study groups, inability to separate induced from spontaneous abortions, and incomplete knowledge of other potentially pertinent lifestyle factors.

Also, most early studies were retrospective; that is, they relied on women's reports of their reproductive history. A significant potential problem in the interpretation of retrospective studies is related to the possibility of recall bias (inaccurate reporting of abortions in retrospect by study participants). Women *with* breast cancer may be more likely to accurately report sensitive reproduction issues, such as having had an abortion, than women *without* breast cancer. This type of reporting bias could make abortion *appear* to be more common among women with breast cancer, possibly leading to the false conclusion that abortion increases the risk of breast cancer.

One earlier study, published in the *Journal of the National Cancer Institute* in 1996, found a 90 percent increase in risk for breast cancer after an induced abortion (the risk of breast cancer among women who reported having had an abortion was 1.9 times the risk among those who did not report a history of abortion). However, the authors, Rookus and van Leeuwen of The Netherlands Cancer Institute, suggested that this figure may have been influenced by inaccurate recall associated with the underreporting of abortion by healthy control subjects in the religiously conservative southeastern region of The Netherlands. In the more liberal western regions of the country, the association between abortion and breast cancer was statistically insignificant. Rookus and van Leeuwen concluded that their study "does not support an appreciably increased risk for breast cancer after an induced abortion."

Another article, published in the *Journal of the National Cancer Institute* in 1994, illustrates the difficulty of drawing conclusions. In this study, Daling and others evaluated the risk of breast cancer among young women with a history of abortion. The results, based on self-reports of abortions, indicated that induced abortion was associated with a 50 percent increase in the average risk of developing breast cancer (the women who reported abortions had 1.5 times

the risk of those who did not). Risk did not vary consistently with number of abortions, the woman's age at abortion or length of pregnancy, nor did the study show an increase in risk associated with spontaneous abortions. An accompanying commentary by Rosenberg, in the same journal, concluded that "While the findings of Daling et al. add to the limited evidence that induced abortion increases the risk of breast cancer, neither a coherent body of knowledge nor a convincing biologic mechanism has been established." Because the evidence is weak and inconsistent, researchers cannot be sure that there is a direct or causal relationship between abortion and breast cancer. At the time of publication, the National Cancer Institute released a press statement, concluding that "Taken together, the inconsistencies and scarcity of existing research do not permit scientific conclusions."

The most common risk factor for breast cancer is increasing age: In this country, this disease affects 1 out of 2,525 women in their thirties and 1 out of 11 in their seventies. Other well-established risk factors include a family history of breast cancer, early age at menarche, late age at menopause, late age at the time of the first full-term birth of a child, and certain breast conditions. Obesity is a risk factor for breast cancer in postmenopausal women. The increased risk of developing breast cancer associated with each factor varies, from 1.5 to 4 times the average risk.

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Sources of National Cancer Institute Information

Cancer Information Service

Toll-free: 1–800–4–CANCER (1–800–422–6237)
TTY (for deaf and hard of hearing callers): 1–800–332–8615

NCI Online

Internet

Use http://www.cancer.gov to reach NCI's Web site.

CancerMail Service

To obtain a contents list, send e-mail to cancermail@icicc.nci.nih.gov with the word "help" in the body of the message.

CancerFax® fax on demand service
Dial 301–402–5874 and listen to recorded instructions.

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